

REMARKS

Independent claims 1 and 15 are amended to clarify that the selecting of configuration data for input to each column of RAM cells is in response to the respective selection signal. Dependent claim 2 is similarly amended. These amendments are made for purposes of clarification and for expediting prosecution. Independent claims 25 and 34 are amended to include limitations similar to those of claims 1 and 15 in regards to a carried in selection signal.

Claims 1-42 remain for consideration and are thought to be allowable over the cited art.

Claims 1, 3-7, 9-11, 13-15, 17-21, 23-25, 27-30, 32-34, 36-39, 41, and 42 are understood to be patentable over "Cliff" (US Patent No. 5,498,975 to Cliff et al.) in view of "Rao" (US Patent No. 6,055,205 to Rao et al.) under 35 USC §103(a). The rejection is respectfully traversed, because the Office Action does not show that all the limitations are suggested by the references and does not provide a proper motivation for modifying the teachings of Cliff with teachings of Rao.

In regards to independent claim 1, for example, neither Cliff nor Rao is understood to suggest using a carried in selection signal from an adjacent column for selecting between a sets of bits for input to the column of RAM cells (last clause, claim 1). Cliff shifts configuration data into an adjacent column, and the shifting is accomplished by changing the programmable bits in Cliff's decoders (col. 7, l. 53-60). The shifting of configuration data does not suggest that a selection signal from an adjacent column is carried in to accomplish the selection.

The limitations in the last clause of claim 1 specify that the loading comprises generating for each column of RAM cells a respective selection signal as a function of the error flag associated with the column and a selection signal carried in from an adjacent column of RAM cells. Thus, the selection signal for one column depends on both the error flag of that column and the selection signal from the adjacent column. An example embodiment is show in FIG. 3 with the signals to the AND gates A1, A2, and A3 including a carried in selection signal from the adjacent column. Cliff does not show a selection signal carried in from an adjacent column being used to generate the

selection signal for the current column. Cliff only shows configuration data being shifted.

Cliff's FIG. 5 shows that the decoders 410 do not carry-in signals from adjacent decoders, and Cliff's description states that each decoder is controlled by a programmable data bit (col. 7, l. 24-35). Thus there is no apparent combination of signals used for selection. In operation, Cliff appears to have the control bit for the defective column set for bypass and the control bits for all subsequent columns set to bypass to accomplish the shifting for the defective column and all columns thereafter.

The claimed carried in selection signal benefits start-up performance because there is no waiting for programmable data bits to be programmed between completion of the BIST and configuration of the device as apparently required by Cliff. As shown in FIGs. 3 and 4 of the present application, each error flag is configured independent of the other error flags during the BIST. The device is ready for configuration once the BIST is complete since each error flag has been configured during the BIST, and the carried in selection signal from an adjacent column in combination with the error flag for a column selects the proper configuration data.

Independent claim 15 is an apparatus claim and includes functional limitations similar to those of claim 1. Thus, all the limitations of claim 15 are not shown to be suggested by the Cliff-Rao combination.

Independent claims 25 and 34 are amended to include limitations similar to those of claims 1 and 15. Thus, for at least the same reasons, the limitations of claims 25 and 34 are not shown to be suggested by the Cliff-Rao combination.

Independent claim 11 is identified as being rejected in view of the Cliff-Rao combination. However, it appears that the Office Action specified claim 25 instead of claim 11 (page 8) in mapping correspondences of the claim limitations to Cliff. In asserting the correspondences, not all the claim limitations are considered. Specifically, claim 11 specifies that each logic circuit has a first input coupled to a respective one of the volatile memory circuits, a second input coupled to an output of a logic circuit associated with an adjacent column of RAM cells, and an output coupled to a selector input of the selector circuit, and each selector circuit selects for input to the associated column of RAM cells, one of a first set of bits of configuration data

addressed to the column of RAM cells and a second set of bits of configuration data addressed to the adjacent column. Thus, the logic circuit provides the selection signal to the selector circuit. As explained above in regards to claim 1, the logic circuit uses a signal carried in from a logic circuit of an adjacent column. Therefore, the limitations of claim 11 are not shown to be suggested by the Cliff-Rao combination.

Dependent claim 6 includes limitations of the plurality of redundant columns of the RAM cells being adjacent to one another within the first RAM circuit. The cited teachings of Cliff at col. 8, l. 3-11 and FIG. 5 do not suggest adjacent redundant columns. The cited teachings suggest spare columns placed throughout the PLD and on either side of the array. Thus, there is no apparent suggestion that Cliff's spare columns are adjacent to one another. Further explanation is requested if the rejection is maintained. Claims 20, 29, and 38 include similar limitations, and the rejection of these claims is similarly traversed.

Dependent claim 7 includes limitations of the plurality of redundant columns being equally spaced, and the same teaching of Cliff are asserted to correspond to these limitations as are asserted to correspond to the limitations of claim 6. There is no apparent suggestion of equally spaced redundant columns; and further explanation is requested if the rejection is maintained.

Dependent claims 3, 4, 5, 9, 10, 13, 14, 17, 18, 19, 23, 24, 27, 28, 32, 33, 36, 37, 41, and 42 depend from the independent claims discussed above, and the limitations are not shown to be suggested for at least the reasons set forth above.

The rejection of claims 1, 3-7, 9-11, 13-15, 17-21, 23-25, 27-30, 32-34, 36-39, 41, and 42 over the Cliff-Rao combination should be withdrawn because a *prima facie* case of obviousness has not been established.

Claims 2, 12, 16, 26, and 35 are understood to be patentable over the Cliff-Rao combination further in view of "Venkatraman" (US Patent Pub. No. 2002/0120826 to Venkatraman et al.) under 35 USC §103(a). The rejection is respectfully traversed because the Office Action does not show that all the limitations are suggested by the references and does not provide a proper motivation for modifying the teachings of Cliff-Rao with teachings of Venkatraman. Claim 2 depends from claim 1, claim 12

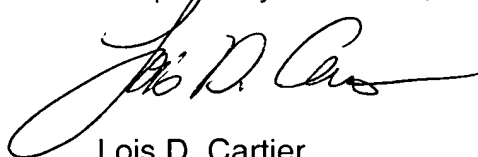
depends from claim 11, claim 16 depends from claim 15, claim 26 depends from claim 25, and claim 35 depends from claim 34. Therefore, the limitations of these dependent claims are not shown to be suggested for at least the reasons set forth above for the base claims. The rejection should be withdrawn because a *prima facie* case of obviousness has not been established.

Claims 8, 22, 31, and 40 are understood to be patentable over the Cliff-Rao combination further in view of "AAPA" (Applicant's Admitted Prior Art) under 35 USC §103(a). The rejection is respectfully traversed because the Office Action does not show that all the limitations are suggested by the references and does not provide a proper motivation for modifying the teachings of Cliff-Rao with teachings of AAPA. Claim 8 depends from claim 1, claim 22 depends from claim 15, claim 31 depends from claim 25, and claim 40 depends from claim 34. Therefore, the limitations of these dependent claims are not shown to be suggested for at least the reasons set forth above for the base claims. The rejection should be withdrawn because a *prima facie* case of obviousness has not been established.

CONCLUSION

Reconsideration and a notice of allowance are respectfully requested in view of the Remarks presented above. If the Examiner has any questions or concerns, a telephone call to the undersigned is invited.

Respectfully submitted,



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I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, on December 19, 2006.

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Signature

